PA168X IAX2 Phone User Manual

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➢ PA168X IP phone Appearance Introduction:

- **PA168X IP Phone Front Illustration** (Refer to Fig 1.1):

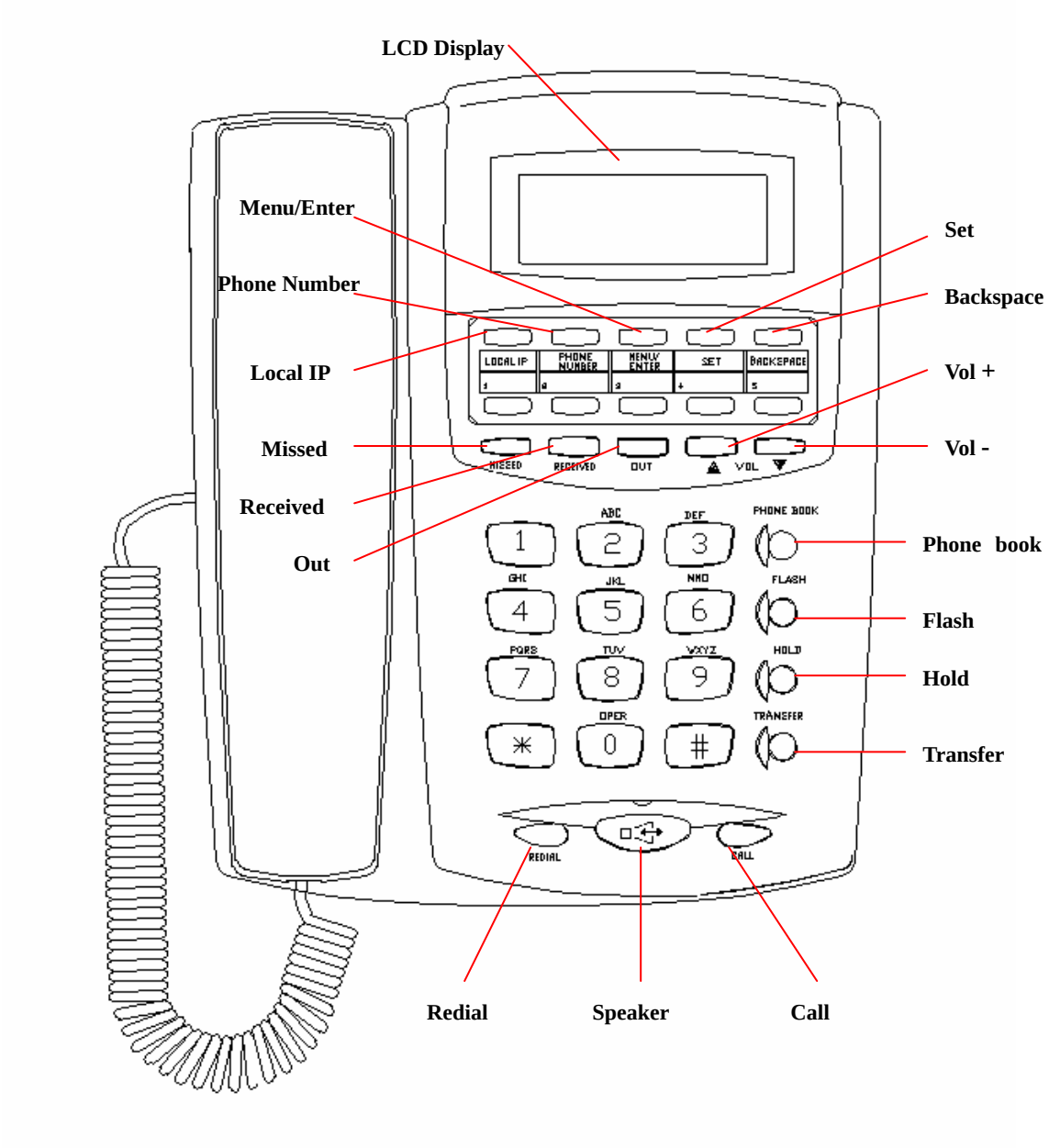


Fig 1.1 PA168X IP Phone Front Illustration

- **PA168X IP Phone Back Illustrations**(Refer to Fig 1.2):

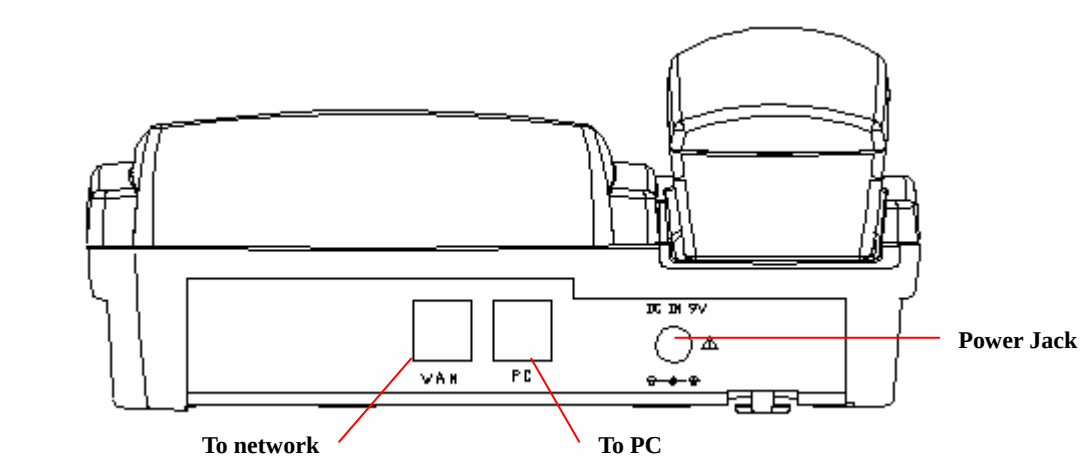


Fig 1.2 PA168X Phone Back Illustration

➢ Function Keys of PA168X IP Phone Introduction:

Keys	Function	Keys	Function
Local IP	With handset hung, press this key to display local IP address on LCD.	Missed	With handset hung, press this key to review missed number.
Phone number	With handset hung, press this key to display phone number on LCD.	Received	With handset hung, press this key to review received number.
Menu/ Enter	With handset hung, press this key to menu mode. Enter the menu mode, press this key to next menu and confirm.	Out	With handset hung, press this key to review dialed number.
Set	Enter the menu mode , press this key becomes to modify the appearance.	Redial	While reviewing missed, received or dialed number, press this key to dial current number.
Backspace	Enter the menu mode; press this key to back upper menu or delete.	Speaker	Press this key to have a call without lifting the handset.
Volume+	With handset picked，press this key to Increase the volumes of handset；With pressing		

	speaker，press this key to Increase the volumes of speaker.
	With pressing “missed” or“received” or “out” and then press this key to turn over the record backward.
	Enter the menu mode; press this key to turn over the item backward.
Volume -	With handset picked，press this key to decrease the volumes of handset；With pressing speaker，press this key to decrease the volumes of speaker.
	With pressing “missed” or“received” or “out” and then press this key to turn over the record forward.
	Enter the menu mode; press this key to turn over the item forward.

➢ Features

➢ Hardware

- Main chip—PA1688 50MHz
- Data Memory—2MB SDRAM
- Program Memory—2 MB Flash memory
- Ethernet Jack—2X 10/100M jacks
- AC/DC adapter—Input AC100--- 230V，Output 9V DC, 1A

➢ Software

- DHCP support for LAN or Cable modem
- PPPoE support for ADSL or Cable modem
- Set phone by HTTP web browser (IE6.0) or Telnet
- Upgrade by FTP

- Support major G.7XX ;GSM610 audio codec
- VAD(Voice active detect)
- CNG (Comfort noise generation)
- Dynamic voice jitter buffer
- G.168/165 compliant 16ms echo cancellation
- Tone generation and Local DTMF re-generation according with ITU-T
- E.164 dial plan and customized dial rules
- 100 entries for quick dial
- 80 entries each for missed calls, answered calls and dialed calls
- Adjustable volume for both handset and speaker
- Voice prompt
- Hotline

➢ Standard and Protocol

PA168X IP Phone supports following standard and protocol:

- IEEE 802.3 /802.3 u 10 Base T / 100Base TX
- Major G.7XX; GSM610 audio codec
- IAX2 (Inter-Asterisk-eXchange V2)
- TCP/IP: Internet transfer and control protocol
- RTP: Real-time Transport Protocol
- RTCP：Real-time Control Protocol
- VAD/CNG save bandwidth

- DHCP：Dynamic Host Configuration Protocol
- PPPoE：PPP Protocol over Ethernet
- DNS：Domain Name Server
- Telnet：Internet's remote login protocol
- FTP：File Transfer protocol
- HTTP：Hyper Text Transfer protocol

➢ **Operating requirements:**

- Operation temperature: 0 to 50° C (32° to 122° F)
- Storage temperature: -30° to 65° C (-22° to 149° F)
- Humidity: 10 to 90% no dew

➢ **Electric requirements:**

- Voltage: 9V DC
- Power: 9W (max.)
- Power adapter: AC/DC input 100-230V，output 9V 1A
- Network interface:2X RJ-45 Ethernet Connectors

➢ **Size：**

200 x 180 x 85 mm (L x W x H)

➢ Installation:

1．Connect handset to base: insert handset cord into handset cord jack at the

left side of the base.

2 . Connect IP phone to Internet: plug the RJ-45 Ethernet cable into the Ethernet Jack. Plug the other end of the cable into HUB switch.

3 . Power on IP phone: plug the power cord adapter into the Power Jack. Then plug the other end of the power cord adapter into the appropriate wall outlet.

➢ Configuration

Three ways of configuring the PA168X IAX2 phone are available: phone keypad, web browser, Telnet commands.

➢ Phone Keypad setup

- **Function Keys Introduction:** When using keypad and LCD to configure the settings of IP phone, following keys will be used:

Keys	Function	Keys	Function
Menu/Enter	Enter the menu and confirm.	**Set**	Becomes to modify the appearance.
Backspace	Delete and back upper menu.	**Vol +**	Turn over menu backward.
Keypads	Modify values	**Vol -**	Turn over menu forward.

Refer to above operation; you can reach any menu to modify any value. Please refer to following structure illustrations to learn the values of each menu item. As for the meaning of each item and value, please refer to ***Web Browser Setting*** chapter.

- **Menu Structure:**

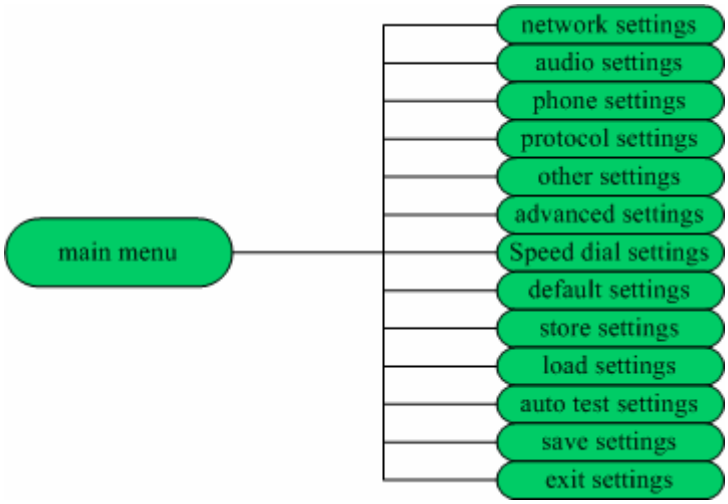


Fig 2.1 Main Menu structure Illustration

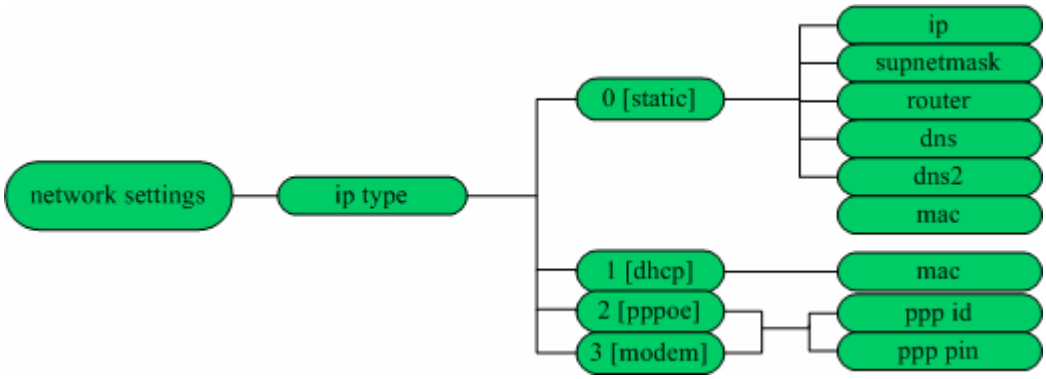


Fig 2.2 Network submenu structure Illustration

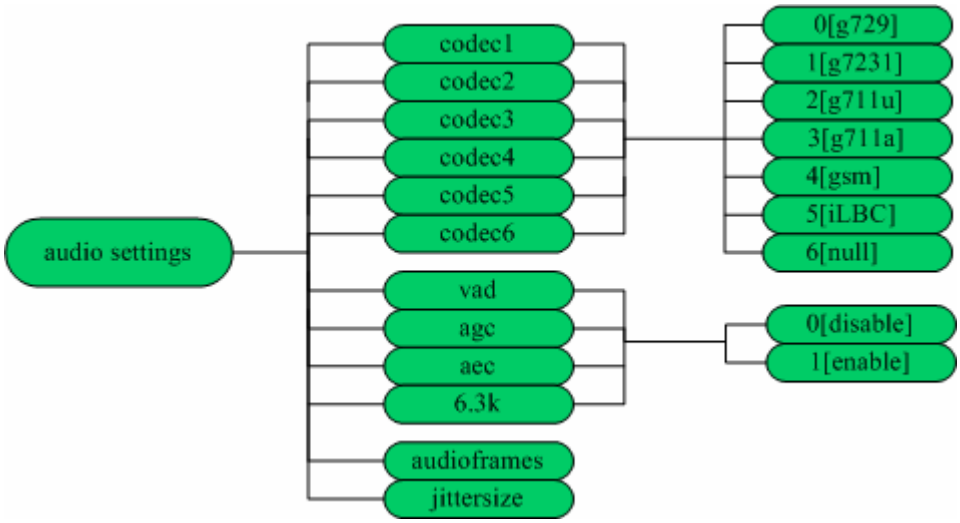


Fig 2.3 Audio submenu structure Illustration

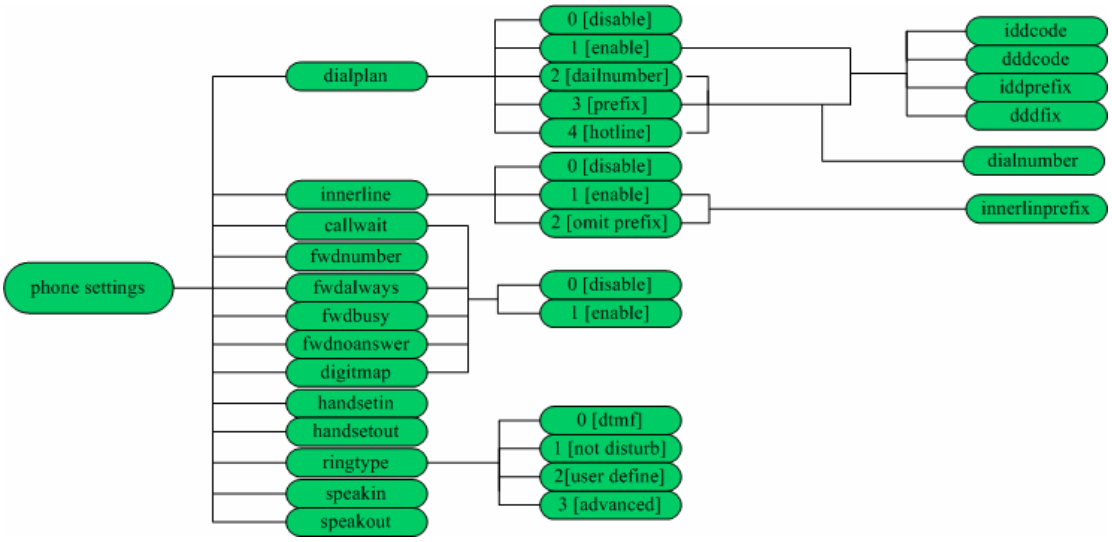


Fig 2.4 Phone submenu structure Illustration

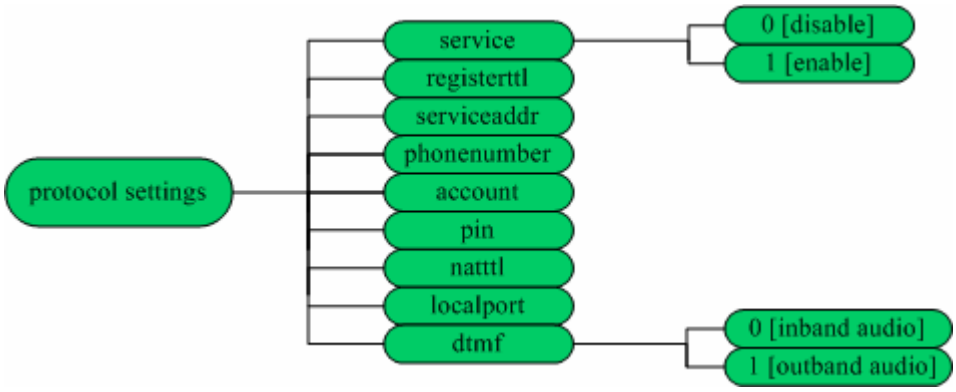


Fig 2.5 Protocol submenu structure Illustration

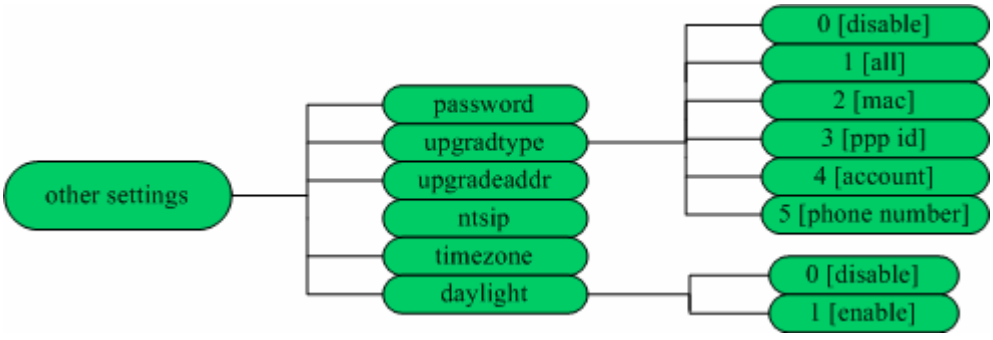


Fig 2.6 other submenu structure Illustration

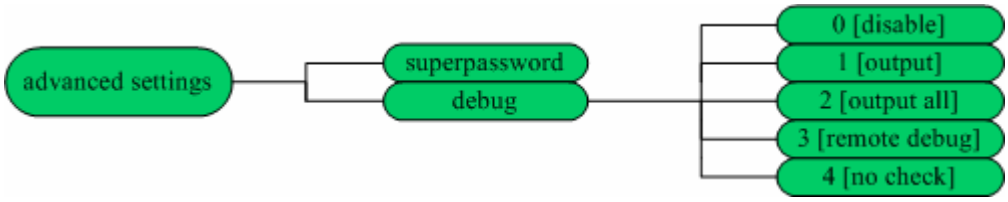
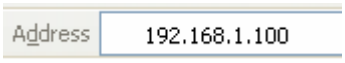


Fig 2.7 advanced submenu structure Illustration

➢ Configured by WEB

Double click icon to open the IE browser. Input the IP address of the phone into address bar (

), and then input password of the phone into the following page.

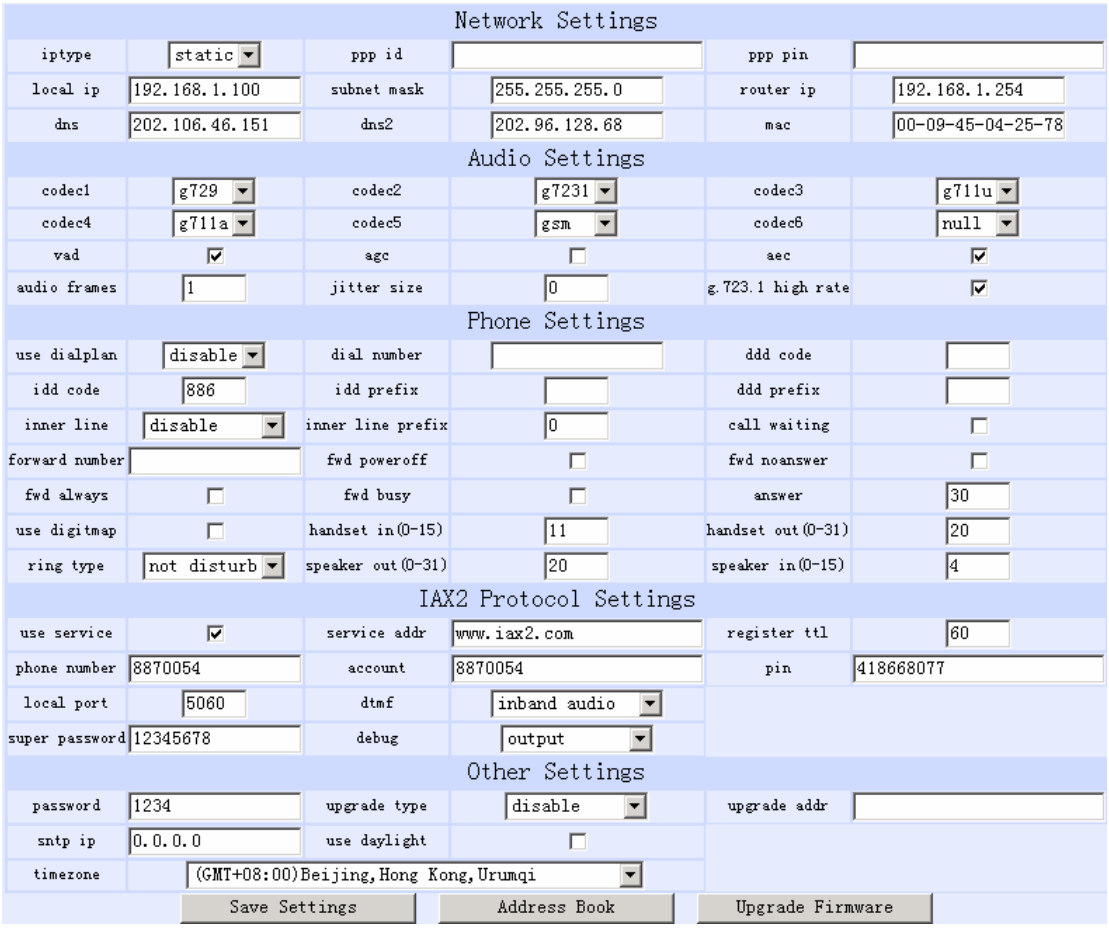
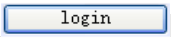

Network Settings
iptype static ppp id ppp pin
local ip 192.168.1.100 subnet mask 255.255.255.0 router ip 192.168.1.254
dns 202.106.46.151 dns2 202.96.128.68 mac 00-09-45-04-25-78
Audio Settings
codec1 g729 codec2 g7231 codec3 g711u
codec4 g711a codec5 gsm codec6 null
vad agc aec
audio frames 1 jitter size 0 g.723.1 high rate
Phone Settings
use dialplan disable dial number ddd code
idd code 886 idd prefix ddd prefix
inner line disable inner line prefix 0 call waiting
forward number fwd poweroff fwd noanswer
fwd always fwd busy answer 30
use digitmap handset in(0-15) 11 handset out(0-31) 20
ring type not disturb speaker out(0-31) 20 speaker in(0-15) 4
IAX2 Protocol Settings
use service service addr www.iax2.com register ttl 60
phone number 8870054 account 8870054 pin 418668077
local port 5060 dtmf inband audio
super password 12345678 debug output
Other Settings
password 1234 upgrade type disable upgrade addr
sntp ip 0.0.0.0 use daylight
timezone (GMT+08:00)Beijing,Hong Kong,Urumqi
Save Settings
Address Book
Upgrade Firmware

Fig 3.1 Http Setting

Default password 1234 is ordinary password and super password is 12345678. With Debug set 0[disable], please input super password; while Debug is not set as 0[disable], please input ordinary password. Then click 

button.

The following configured page wills popup. Refer to Fig 3.1 please.

Network Setting：

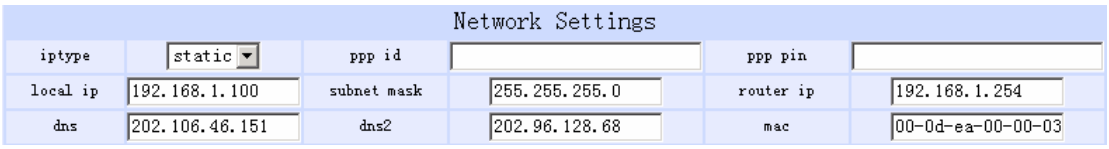


Fig 3.2 Network Setting

- **iptype**: Set how IP phone gets relevant network parameters by selecting corresponding item from drop down list.

  - **static ip**: Select this item to authorize users set IP address, subnet mask and router IP address of IP phone manually.

  - **dhcp**: Select this item to enable DHCP mode. With this system, your LAN or router automatically assigns all the required network parameters to any device connected to it when the device log on. PA168X IP phone is shipped from the factory with DHCP on. So, if your LAN or router is configured to use DHCP addressing, the IP phone's LAN parameters will automatically be configured as soon as it is connected to the LAN or router and powered up.

  - **pppoe**：Those ADSL and Cable Modem users please select this item for it is a protocol especially designed for them. With this system, ADSL ISP automatically assigns all the required IP parameters to any device connected to it when the device log on.

- **modem** : If the IP phone used with modem, please select this item to get relevant network parameters auto. Then please fill ID and pin into ppp id and ppppin fields.

- **ppp id:** With **pppoe** or **modem** selected in **iptype** drop down list, please enter the user name here.

- **ppp pin:** With **pppoe** or **modem** selected in **iptype** drop down list, please enter the password here.

- **local ip:** With **static ip** selected in **iptype** drop down list, please enter IP address of IP phone here.

- **subnet mask:** With **static ip** selected in **iptype** drop down list, please enter subnet mask of IP phone here.

- **router ip:** With **static ip** selected in **iptype** drop down list, please enter router IP address of IP phone here.

- **dns:** With **static ip** selected in **iptype** drop down list, please enter IP address of DNS server here.

- **dns 2:** With **static ip** selected in **iptype** drop down list, please enter IP address of backup DNS server here.

- **mac:** MAC address is the physical address supplied by the Ethernet

NIC. PA168X phone is shipped from the factory with a unique algorism MAC address printed on the back of the base.

Audio settings:

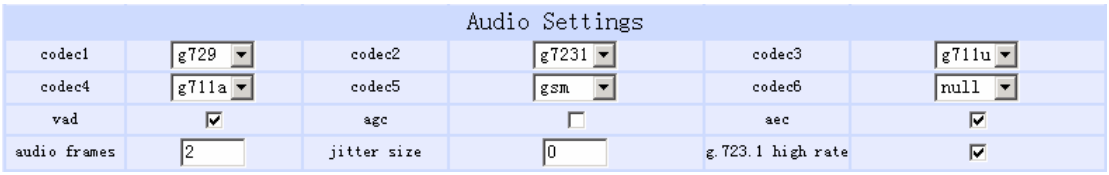


Fig 3.3 Audio Setting

- **codec1:** Set the priority 1 of the audio compression algorithm. The options are **g729** , **g7231** , **g711u** , **g711a** and **gsm**.
- **codec2:** Set the priority 2 of the audio compression algorithm. The options are **g729** , **g7231** , **g711u** , **g711a** and **gsm**.
- **codec3:** Set the priority 3 of the audio compression algorithm. The options are **g729** , **g7231** , **g711u** , **g711a** and **gsm**.
- **codec4:** Set the priority 4 of the audio compression algorithm. The options are **g729** , **g7231** , **g711u** , **g711a** and **gsm**.
- **codec5:** Set the priority 5 of the audio compression algorithm. The options are **g729** , **g7231** , **g711u** , **g711a** and **gsm**.
- **codec6:** Set the priority 6 of the audio compression algorithm. The

options are **g729**，**g7231**，**g711u**，**g711a** and **gsm**.

- **vad:** Enable/disable VAD (voice activity detection).
- **agc:** Enable/disable AGC.
- **aec:** Enable/disable VEC.
- **audio frame:** Set audio frames in RTP package. Minimum is 1 and maximum is 8.
- **jitter size :** Set buffer size of RTP package. The value range is 0-32.
- **g.723.1 high rate:** enable/disable g.723.1 high rate. G.723.1 high rate is 6.3kbps, low rate is 5.3kbps.

phone settings:

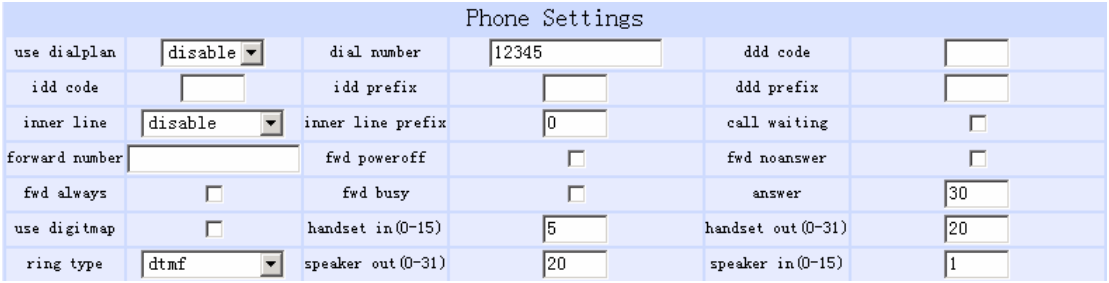


Fig 3.4 Phone Setting

- **use dialplan:** Set whether use dial plan or use dial number by selecting the corresponding item in drop down list.

- **disable:** Do not use dial plan or dial number by selecting this item.
- **enable:** Use dial plan by selecting this item.
- **dialnum:** Use dial number by selecting this item. With this item selected, please enter the dial prefix into **dial number** field.
- **prefix:** Use specially service by selecting this item.
- **Hotline:** Use Hotline function by selecting this item. With this item selected, please enter the hotline number into **dial number** field.

- **dial number:** With **dialnum** selected in **use dialplan** drop down list, please enter the dial prefix into this field according to requirement of log in server.
- **ddd code:** With **enable** or **dialnum** selected in **use dialplan** drop down list, set area code according to E.164 dial rule. For example, Beijing is 10; Shanghai is 21.
- **idd code:** With **enable** or **dialnum** selected in **use dialplan** drop down list, set country code according to E.164 dial rule. For example, China is 86; U.S.A is 1.
- **idd prefix:** With **enable** or **dialnum** selected in **use dialplan** drop down list, set international call prefix according to E.164 dial rule, such as 00.
- **ddd prefix:** With **enable** or **dialnum** selected in **use dialplan** drop down list, set long distance call prefix according to E.164 dial rule, such as 0.

Note With **dialnum** seletcted in use **dialplan** drop down list, you can also set dddcode, iddcode, iddprefix and dddprefix according to requirement of system.

- **innerline:** Enable/disable innerline call by selecting corresponding items from dropdown list.

  - **disable:** Disable call innerline by selecting this item.

  - **enable:** enable call innerline by selecting this item.

- **innerlineprefix:** With **enable** selected in **innerline** dropdown list, please fill the prefix number pick up to inner line, such as 0.

- **Call waiting:** Enable/disable call waiting by checking/unchecking the box.

- **forward number:** Enter receiving forwarded calls phone number into this field; If the IP phone used with modem, with **modem** item selected in **iptype** list box, and then fill ISP number into this field.

- **fwd noanswer:** Forward calls without replying by checking this box. Please enter receiving forwarded calls phone number into **fwd number** field.
- **fwd always:** Forward all calls by checking this box. Please enter receiving forwarded calls phone number into **fwd number** field.
- **fwd busy:** Forward calls if busy by checking this box. Please enter receiving forwarded calls phone number into **fwd number** field.

- **answer:** Enter a number from 0 through 60 to set the entries of the seconds before the phone answer the call auto or forward the calls.

- **Use digitmap:** Enable/disable digit map by checking/unchecking the box.

- **handset in:** Set the volume of handset input.

- **handset out:** Set the volume of handset output.

- **ring type:** Set ring type by selecting corresponding item from drop down list.

  - **dtmf :** Set ring as ordinary rings in different frequency

  - **not disturb**: Set the phone do not ring by selecting this item.

  - **user define**：Set ring as music saved by user by selecting this item.

  - **Advanced:** Set the ring used the individualized tone provided by system (need system support).

- **speaker out:** Set the volume of handfree output.

- **speaker in:** Set the volume of handfree input.

Protocol Setting：

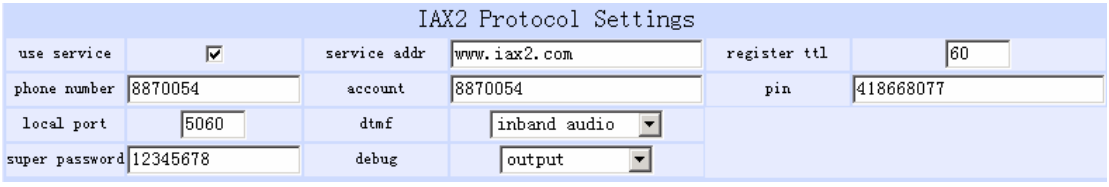


Fig 3.5 Protocol Setting

- **use service:** Enable/disable service by checking/clearing this box. To make calls through Asterisk Server, please check this box; otherwise, phone can only make IP-to IP calls.

- **service addr**: If "**use service**" is checked, please set the URI of the Asterisk Server into "**service addr**".

- **register ttl :** IP phone will send a keep-alive registration message to Asterisk Server every "**register ttl**" seconds. The minimum value is 10, maximum value is 65535. Default is 60.

- **phone number:** The local phone number of this phone, usually is allocated by system.

- **account**: With Asterisk Server system which requires authentication, please put the username/account into this field.

- **pin:** With Asterisk Server system which requires authentication, please put the password into this field.

- **local port:** The local UDP port registered with Asterisk Server to accept incoming handshaking messages. The default port number is 4569.

- **dtmf:** Set DTMF signal sending way by selecting **inband audio**, **outband audio** from list box.

- **super password:** Set the super password of the phone.(Default super password is 12345678).
- **debug:** Set the debug level of the phone.
  - **disable:** Disable output the debug message by selecting this item.
  - **output:** Output the operation information to the window, such as register, input by selecting this item.
  - **output all:** Output all debug information and data in test window by selecting this item.
  - **remote debug:** Save the debug information in SDRAM of IP phone by selecting this item.
  - **no check:** Disable checking firmware tags when upgrading. This is not suggested, because it will increase the risk of upgrading the wrong firmware into the phone.

Other settings:

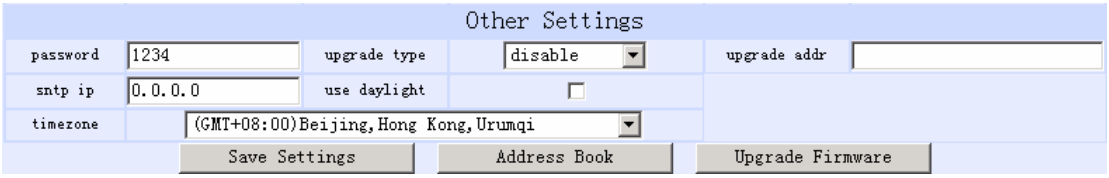


Fig 3.6 Other Setting Page

- **password:** Set the password of the phone. (Default password is 1234).
- **upgradetype:** Set the auto-upgrade type of the phone.
  - **disable :** Disable auto-upgrade .

- **all:** pa168X phone will find matching firmware binary file and configuration file of the hardware type only at the FTP server specify by **upgradeaddr** item .
- **mac:** pa168X phone will find matching firmware binary file and configuration file of the MAC address only at the FTP server specify by **upgradeaddr** item .
- **ppp id:** pa168X phone will find matching firmware binary file and configuration file of the ppp id only at the FTP server specify by **upgradeaddr** item .
- **account:** pa168X phone will find matching firmware binary file and configuration file of the account only at the FTP server specify by **upgradeaddr** item .
- **phonenumber**: pa168X phone will find matching firmware binary file and configuration file of the phone only at the FTP server specify by **upgradeaddr** item .

- **upgrade addr:** Put IP address or domain name obtained by ISP of FTP server supplying upgrade program into this field.

- **nts ip:** Fill IP address of time server here. When network without Internet connect, Fill special IP address 255.255.255.255.

- **use daylight:** Enable/disable daylight.

- **timezone:** Select correct time zone in list box.

When debug set as 0[disable], if input ordinary password (default one is 1234), then following page will pop up after clicking login. And only those parameters can be modified.

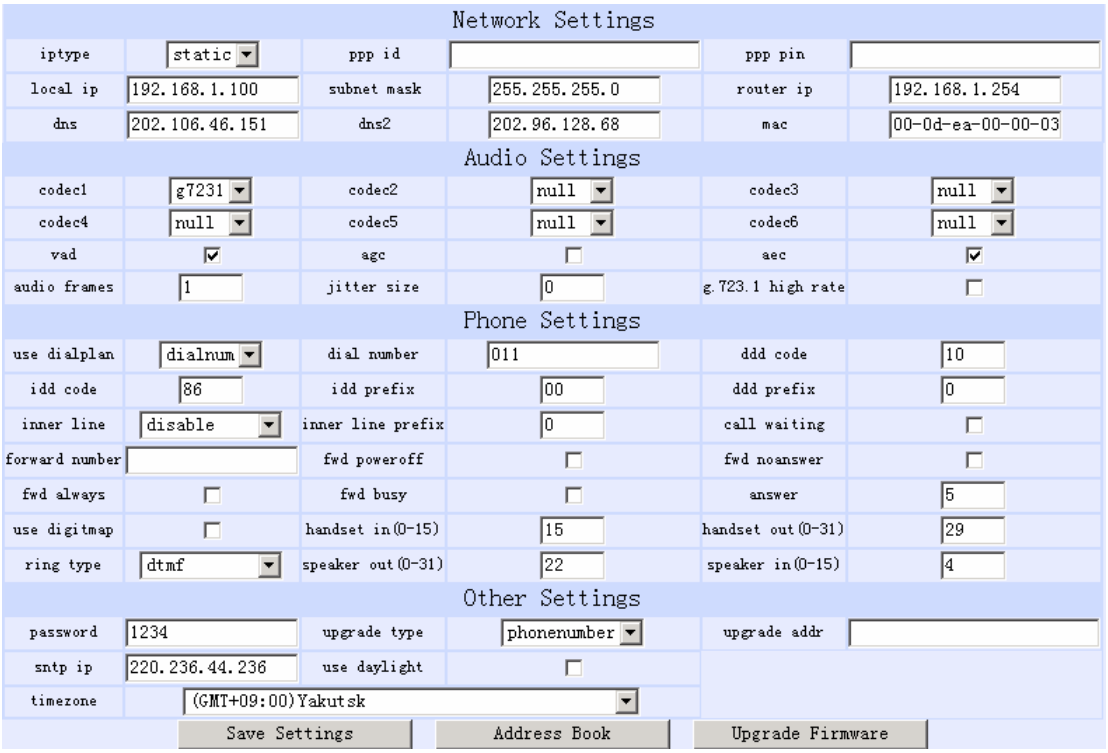


Fig 3.7 Setting Page using ordinary pin with Debug set as 0 [disable]

- **Update:** Click this button to save the configuration and the phone will reboot. Once the phone reboots successfully, the new configuration is effective.

✎**Note** After entering set page, if **Update** button is not clicked within 10 minutes, then when you click it again, the index page asking for pin will pop up again. Then please input the password again to enter the set page and then click **Update** button to confirm the modification.

Phone Book: Click this button to open the speed dial settings page. Please refer to Fig 3.7. In this page, you can set and save the speed dial number by typing the name into the **Name** field and then entering the corresponding number following the name. For example, input Jack in Name field following 001, and then input 5989426454 into Phone number field. Then Jack's number 5989426454 is saved in phone book. Then please click **Save/Back** button. In normal state, you can use speed dial to call numbers saved in phone book.

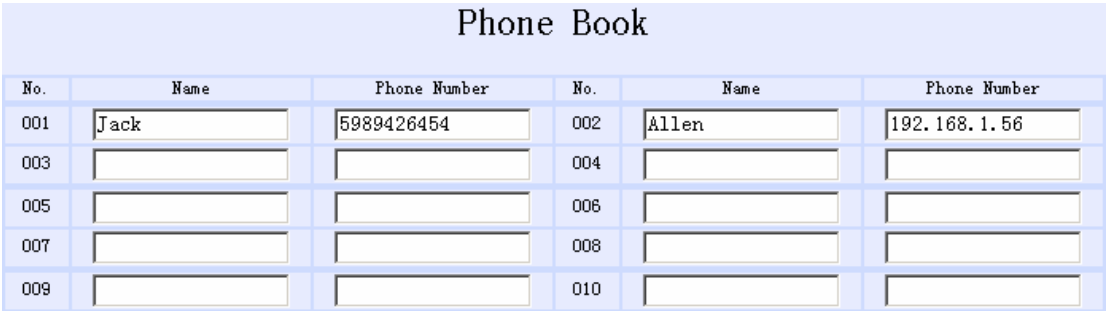


Fig 3.8 Phone Book Illustration

Upgrade Program: Click this button to update the program of IP phone.

Update Digitmap: Click this button to update the digitmap of the phone.

- **Telnet Configuration**

  - On the PC choose **Start>Run**, and then type **telnet 192.168.1.100** into **Run** field in popuping Run dialog. Or input **telnet 192.168.1.100** in the DOS window. Then the following information will be displayed.

```
Password :
```

Then please type password. With debug is set as 0[disable], if type ordinary password (default one is 1234), after Retun, you will see：

```
Password : ****
P:\>
```

If you type super password, then you will see:

```
Password : ********
P:\>
```

Above information indicates that IP phone is under setting mode, and then you can set the PA168X IP phone by using the telnet commands.

- **PA168X Telnet Commands Explanation**

PA168X Telnet Commands

Command	Function
?	Supply command name and parameters
get	Display basic parameters of the PA168X IP phone
set	Set parameters of the PA168X IP phone
store	Save current settings to designated position
load	Load designated settings to current position
exit	Exit from the setting mode without saving the configuration
write	Exit with saving all configurations and restart PA168X

ping	Ping other net parameter
ftp	The phone connects to FTP server and then get the files

Detail description of PA168X Telnet commands

Command ?

Syntax description: No optional parameter

Usage: Type command name and parameters following P:\> . Be used as the keyword to supply keyword and parameters of the relevant commands.

Relevant usage: None

Detailed description:

?	List help of all commands

For example:

```
P:\>?
set
get                 list settings
store x             store current to xth settings
load x              load xth settings to current
exit
write               save settings
```

Command get

Syntax description: No optional parameter of keywords

Usage: Display basic parameters of the PA168X IP phone

Relevant usage: None

Detailed description:

get Display basic running parameters of the PA168X IP phone. Input ordinary password without debug being set as 0[disable], or input super password with debug set as 0[disable], then following parameters of IP phone will be displayed:

```
PA168X V1.42 settings
Password: ********
P:\>get
***************Network Settings***************
iptype 0[static]
ip 192.168.1.100          subnetmask 255.255.255.0    router 192.168.1.254
dns 202.106.196.152       dns 2202.106.196.115       mac    00-09-45-65-a3-e6
***************Audio Settings***************
codec1 0[g729]            codec2 1[g7231]                codec3 2[g711u]
codec4 3[g711a]           codec5 4[gsm]                  codec6 6[null]
vad 1[enable]             agc 0[disable]                 aec 1[enable]
audioframes 1             jittersize 0                   6.3k 1[enable]
***************Phone Settings***************
dialplan 1[enable]        dddcode 10
iddcode 86                iddprefix 00                   dddprefix 0
innerline 1[enable]       innerlineprefix 0              callwaiting 1[disable]
fwdnumber 82378009        fwdpoweroff 1[enable]
fwdalways 1[enable]       fwdbusy 1[enable]       fwdnoanswer 1[enable]
answer 30
digitmap 1[enable]        handsetin 5                    handsetout 20
ringtype 0[dtmf]          speakerout 20                  speakerin 1
***************Protocol Settings***************
service 1[enable]         registerttl 60
serviceaddr 203.93.9.57
phonenumber 82378801      account [empty]                pin [empty]
localport 1732            dtmf 0[inband audio]
***************Other Settings***************
superpassword 12345678    debug 1[output]
password 1234             upgradetype 0[disable]
upgradeaddr [empty]
sntpip 0.0.0.0            daylight 0[disable]
timezone 55[(GMT+08:00)Beijing,Hong Kong,Urumqi]
```

Input ordinary password with debug set as 0[disable], following information will

be seen:

```
PA168X V1.42 settings
Password:****
P:\>get
**********Network Settings**********
iptype 0[static]
ip 192.168.1.100        subnetmask 255.255.255.0        router 192.168.1.254
dns 202.106.46.151   dns2 202.96.128.68                 mac 00-0d-ea-00-00-03
**********Audio Settings**********
codec1 0[g729]              codec2 1[g7231]                 codec3 2[g711u]
codec4 3[g711a]             codec5 4[gsm]                   codec6 6[null]
vad 1[enable]               agc 0[disable]                  aec 1[enable]
audioframes 2               jittersize 0                    6.3k 1[enable]
**********Phone Settings**********
dialplan 1[enable]        dddcode 10
iddcode 86                  iddprefix 00                    dddprefix 0
innerline 1[enable]       innerlineprefix 0               callwaiting 1[enable]
fwdnumber 82378009        fwdpoweroff 1[enable]
fwdalways 1[enable]       fwdbusy 1[enable]       fwdnoanswer 1[enable]
answer 30
digitmap 1[enable]        handsetin 5                     handsetout 20
ringtype 0[dtmf]          speakerout 20                   speakerin 1
**********Other Settings**********
password 1234               upgradetype 0[disable]
upgradeaddr [empty]
sntpip 0.0.0.0              daylight 0[disable]
timezone 55[(GMT+08:00)Beijing,Hong Kong,Urumqi]
```

Command set

Syntax description: set keywords value

Usage: Used to configure password and other running parameters of PA168X IP phone.

Detailed description:

set iptype X

Set how IP phone gets relevant network parameters. X ranged from 0 through 3: 0: authorize users set IP address, subnet mask and router IP address of IP phone manually; 1: use DHCP mode. With this system, your LAN or router automatically assigns all the required network parameters to any device connected to it when the device log on. PA168X IP phone is shipped from the factory with DHCP on. So, if your LAN or router is configured to use DHCP addressing, the IP phone's LAN parameters will automatically be configured as soon as it is connected to the LAN or router and powered up; 2: use PPPoE mode. Those ADSL and Cable Modem users please select this item for it is a protocol especially designed for them. With this system, ADSL ISP automatically assigns all the required IP parameters to any device connected to it when the device log on; 3: use modem mode. Those who use IP phone with modem, please set the value as 3.

set pppid XXX

With **iptype** set as **2**, use this command to set ADSL ID; with **iptype** set as **3**, use this command to set Modem ID.

set ppppin XXX

With **iptype** set as **2**, use this command to set ADSL pin; with **iptype** set as **3**, use this command to set Modem pin.

set ip XXX.XXX.XXX.XXX

With **iptype** set as **0**, use this command to set IP address of PA168X IP phone.

set subnetmask XXX.XXX.XXX.XXX

With **iptype** set as **0**, use this command to set subnet mask of PA168X IP phone.

set router XXX.XXX.XXX.XXX

With **iptype** set as **0**, use this command to set router IP of network with PA168X IP phone.

set dns XXX.XXX.XXX.XXX

With **iptype** set as **0**, use this command to set IP address of DNS server.

set dns2 XXX.XXX.XXX.XXX

With **iptype** set as **0**, use this command to set IP of backup DNS server.

set mac XX-XX-XX-XX-XX-XX

Set MAC address of the PA168X IP phone. Parameter xx-xx-xx-xx-xx-xx must be an HEX number.

---

set codec1 X

Set the priority 1of the audio compression algorithm. X is range from 0 through 4: 0: g729; 1:g7231; 2: g711u; 3: g711a; 4: gsm.

set codec2 X

Set the priority 2 of the audio compression algorithm. X is range from 0 through 4: 0: g729; 1:g7231; 2: g711u; 3: g711a; 4: gsm.

set codec3 X

Set the priority 3 of the audio compression algorithm. X is range from 0 through 4: 0: g729; 1:g7231; 2: g711u; 3: g711a; 4: gsm.

set codec4 X

Set the priority 4 of the audio compression algorithm. X is range from 0 through 4: 0: g729; 1:g7231; 2: g711u; 3: g711a; 4: gsm.

set codec5 X

Set the priority 5 of the audio compression algorithm. X is range from 0 through 4: 0: g729; 1:g7231; 2: g711u; 3: g711a; 4: gsm.

set codec6 X

Set the priority 6 of the audio compression algorithm. X is range from 0 through 4: 0: g729; 1:g7231; 2: g711u; 3: g711a; 4: gsm.

set vad X

Enable/disable VAD. X is ranged from 0 through 1: 0: disable VAD; 1: enable VAD.

set agc X

Enable/disable AGC. X is ranged from 0 through 1: 0: disable AGC; 1: enable AGC.

set aec X

Enable/disable AEC. X is ranged from 0 through 1: 0: disable AEC;

1: disable AEC.

set audioframes X

Set audio frames in RTP package. X is Arabic numerals between 0 and 7.

set jittersize X

Set buffer size of RTP package. X is range from 0-32.

set 6.3k X

With G.7231, set PA168X IP phone to use 6.3K rate or not. X is ranged from 0 through 1: 0: use 6.3K rate; 1: use 5.3K rate.

---

set dialplan X

Enable/disable dial plan and dial number. Parameter X ranged from 0 through 4: 0: disable dial plan; 1: enable dial plan; 2: use dial number; 3: use 179XX service.;4: use hotline function.

set dialnumber XX

When **set dialplan** value set as 2, please use this command to set **dial number.** For example, with eTalk card used, please set it as 00. When **set dialplan** value set as 4, please use this command to set **hotline number.**

set dddcode XX

Set the area code when set **dialplan** value set as **1** or **2**. For example, the area code of Beijing is 10; the area code of Shanghai

is 21, and the area code of Chengdu is 28, etc. Parameter xxx must be an Arabic numeral and no longer than 3 characters.

set iddcode XXX

Set the country code when set **dialplan** value set as **1** or **2**. For example, the country code of China is 86; the country code of USA is 1, etc. Parameter xxxx must be an Arabic numeral and no longer than 4 characters.

set iddprefix XX

Set IDD service prefix number when set **dialplan** value set as **1** or **2**. For example, IDD service prefix number of china is 00; IDD service prefix number of USA is 1, etc. Parameter xxx must be an Arabic numeral and no longer than 3 characters.

set dddprefix XX

Set DDD service prefix number when set **dialplan** value set as **1** or **2**. For example, DDD service prefix number of china is 0; DDD service prefix number of USA is 1, etc. Parameter xxx must be an Arabic numeral and no longer than 3 characters.

set innerline X

Set use innerline call or not. X ranged from 0 through 1: 0: disable; 1: enable innerline call.

set innerlinepreifx X

With **innerline** set as **1[enable]** , please set the prefix to pick up inner line, such as 0.

set callwait X

Set whether to use call wait. X ranged from 0 to 1: 0: do not use call wait; 1: use call wait.

set fwdnumber XXXXXXX

Set receiving forwarded calls phone number. XXXX must be an Arabic numeral and no longer than 16 characters

set fwdalways X

Enable/disable forward all calls. X is ranged from 0 through 1. 0: do not forward all calls; 1: forward all calls.

set fwdbusy X

Enable/disable forward calls if busy. X is ranged from 0 through 1. 0: do not forward calls if busy; 1: forward call if busy.

set fwdnoanswer X

Enable/disable forward calls without replying. X is ranged from 0 through 1. 0: do not forward calls without replying; 1: forward call without replying.

set answer X

Set the ring seconds before the phone answers the call auto or forward the calls. X is ranged from 0 through 60.

set digitmap X

Set whether to use digitmap. X ranged from 0 to 1: 0: do not use digitmap; 1: use digitmap.

set handsetin X

Set initial volume of handset. X is ranged from 0 through 15.

set handsetout X

Set initial volume of handout. X is ranged from 0 through 31.

set ringtype X

Set types of ring. X is ranged from 0 through 3: 0: ring as ordinary rings in different frequency; 1: do not ring; 2: ring as music saved by user; 3: Set ring used the individualized tone provided by system (need system support).

set speakerin X

Set initial volume of microphone of the base. X is ranged from 0 through 15.

set speakerout X

Set initial volume of speaker out. X is ranged from 0 through 31.

---

set service X

Set register the Asterisk Server or not. X ranged from 0 through 1.

0: do not register; 1: register.

set registerttl X

Set register TTL. X is range from 10 through 65535 Sec. default

value is 60 Sec.

set service addr XXXX

Set IP address or URI of Asterisk Server.

set phonenumber XXXXXXXX

Set a phone number of PA168X IP phone. Value xxxxx must be an Arabic numeral and no longer than 16 characters.

set account XXXXXX

Set the account; Value xxxxxx must be an Arabic numeral and no longer than 32 characters.

set pin XXXXXXXXXX

Set the account; Value xxxxxx must be an Arabic numeral and no longer than 32 characters.

set localport XXXX

Set register port. Value XXXX default is 4569.

set dtmf X

Set DTMF relay type. X is ranged form 0 through 1: 0: inband audio ; 1: outband audio.

---

set password XXXX

Set password of the PA168X IP phone. XXX must be ASCII characters.

set superpassword XXXX

Set super password of the PA168X IP phone. XXX must be ASCII characters.

set debug X

Set open debugging message output grade for special tool. X is ranged from 0 through 5: 0: close debugging output; 1: output the operation information to the window; 2: output all the bug information and data in test window; 3: save the bug information into SDRAM; 4: disable checks the mark.

set upgradetype X

Set auto-upgrade matching type , X is range from 0 through 5 , 0------disable ; 1------all ; 2------ mac ; 3------ppp id; 4------ account; 5------ phone number。

set upgradeaddr XXX.XXX.XXX.XXX

Set IP address or domain name of FTP server supplying upgraded program of PA168X IP phone.

set ntsip XXX.XXX.XXX.XXX

Set IP address of timeserver.

set daylight X

Set use daylight or not. X ranged from 0 through 1: 0: do not use

daylight; 1: use daylight.

set timezone XX

Set time zone.

Command store

Syntax description: no keyword. Parameter ranged from 0 through 4.

Usage: Save the current settings to the designated position.

Relevant Usage: store 1

Command load

Syntax description: no keyword. Parameter ranged from 0 through 4.

Usage: Load the designated settings to the current position.

Relevant Usage: load 1

Command exit

Syntax description: no keyword and parameter

Usage: Exit from Telnet command window without saving the configuration.

Relevant usage: None

Command write

Syntax description: No keyword and parameter

Usage: Save the configuration and restart the PA168X IP phone.

Command ping

Syntax description: ping IP address

Usage: ping IP address of other NAT device

Relevant usage: In telnet window, input ping xx.xxx.xx.xx (an IP address) and return, then the result will be displayed. If the address is effective, "ping OK" will be seen; if the address is ineffective, nothing will be seen. Fox example:

```
P:\>ping 203.93.9.57
P:\>
ping OK
P:\>ping 27.56.120.56
P:\>
```

Note Usually, the echo time of ping command is no more than 1 second. So if the result is not displayed in 5 seconds, ping command is fail.

ftp command

Syntax description: ftp value

Usage: the system connects to the FTP server auto to get the corresponding file and deal with it.

Relevant usage: ftp X

X ranged from 0 through 2:

X-0: Connect to FTP Server to get the file of updating program and save it to the SDRAM of the phone. Then the file can be read by PalmTool. This operation aims at testing.

X-1: Connect to FTP Server to get the file of updating program and

update program Flash. This operation aims at updating program.

X-2: Connect to FTP Server to get the file of updating dial rules and update program Flash. This operation aims at updating dial rule.

Note When you use ftp 0 and ftp 1 commands, if the file get from FTP server is too large or the net speed is too slow, then the process will not be seen in telnet window. Please be patient. Using ftp command in telnet to get file spends almost same minutes as getting file using phone. So if nothing is displayed after too long time, it means that ftp is fail.

Note All the Telnet commands of PA168X IP phone should be written in low case and the password is case sensitive.

➢ Upgrade PA168X IP phone

➢ Set FTP server

FTP server can be supplied by the server provider as well as setup by the users in LAN. Please set the IP address of FTP server.

➢ Prepare Updated program

You can ask the server provider for the latest version of program or visit www.aredfox.com to download the latest version.

➢ Operation

If you have got the IP address of the FTP server from ISP, please do as follows:

a) Use keypad to enter setting mode

b) Use keypad to input the IP address of FTP server

c) Press 8 Local IP , then No19 light will blink twice a second. Once the phone restarts successfully, the new program is effective.

✎ **Note** Please do not change the name of the upgraded program, or the operation will be fail.

➢ Usage of the phone

➢ Receiving calls:

PA168X IP phone can receive incoming calls from other PA168X IP phone and devices that support the IAX2 protocol. It works just like an ordinary phone for incoming calls. When it rings, you can receive the call by following methods:

① Use handset: Lift the handset and begin speaking. When the call is over, put the handset back.

② Handset to hand free: While receiving call with handset, press Speake on the keypad and then put down the handset. When the call is over, press Speake again.

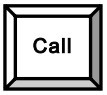
③ Hand free: Press Speake to speak to the other party. When the call is over, press Speake again.

④ Hand free to handset: While receiving the call with Speake pressed , pick up the handset to continue the call. When the call is over, put back the handset.

✎ **Note** When you communicate with the other party without lifting the handset, please do not exceed 40 CM from speaker.

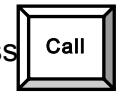
➢ **Place a call**

- **Call another PA168 IP phone under the Asterisk Server:**

1. Handset: Pick up the handset and listen for the Internet dial tone. Then dial the phone number you wish to call and press 

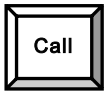
or

to end the dialing. Once the call connection has been established and the ring tone has sounded, wait for the other party to answer. When the other party answers, you can begin speaking. When the call is over, put back the handset. The dialed number has been saved into the buffer.
2. Hand free: Press

and listen for the Internet dial tone. Then input the phone number you wish to call and press 

or

to end the dialing. Once the call connection has been established and the ring tone has sounded, wait for the other party to answer. When the other party answers, you can begin speaking. When the call is over, Press

again. The dialed number has been saved into the buffer.
3. Blind dialing: Use the keypad to enter the phone number you wish to call and then press 

or

to make the call. Once the call connection has been established and the ring tone has sounded, wait for the other party to answer. When the other party answers, you can begin speaking. When the call is over, Press

again. The

dialed number has been saved into the buffer.

- **Place a call without login the Asterisk Server**

If PA168X IP phone does not login the SIP proxy, you can place a call by lifting the handset or pressing Speaker and then inputting the IP address of the other party, and then pressing Call or # calling.

View Records

- View missed calls

  Click Record, then you will hear the record of missed call. Click Vol+ to turn the numbers orderly; click Vol - to turn the numbers reservedly. If there is no record, you will hear nothing.

- View received call

  Click Play, then you will hear the record of the received call. Click Vol+ to turn the number orderly; click Vol- to turn the numbers reservedly. If there is no record, you will hear nothing.

- View dialed number

  Click Play, then you will hear the record of the dialed call. Click Vol + to turn the number orderly; click Vol - to turn the numbers reservedly. If there is no record, you will hear nothing.

- When you hear the number you want to dial, please press # to place a call directly.

✎ **Note** PA168X IP phone supports saving 80 entries unanswered call, dialed call

and received call ranged from 1-80 at best. When the entries arrives 80, the latest record will cover the first one. The record will be lost when the phone restarts or turned on.

Appendix Table： PA168X IP phone digital-character key map:

Keys	Press Once	Press Twice	Press Thrice	Press quartic	Press quintic
1	1	.	,	?/_	!//
2	2	A/a	B/b	C/c	[
3	3	D/d	E/e	F/f	]
4	4	G/g	H/h	I/i	*
5	5	J/j	K/k	L/l	
6	6	M/m	N/n	O/o	#
7	7	P/p	Q/q	R/r	S/s
8	8	T/t	U/u	V/v	
9	9	W/w	X/x	Y/y	Z/z
*	.				
0	0	space	:/@	;/-	\ /&
#	Case change				

Reserves the right to make changes in technical and product specification without prior notice.

PA168X IAX2 Phone User Manual (V1.42)

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